

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re application of: Corey M. Grove et al.

Serial No. 09/992,684

Filed: November 19, 2001

For: MODULAR HELMET-MASK ASSEMBLY

Attorney Docket No.: DAM 557-01

Group Art Unit: 3734

Examiner: Michael G. Mendoza

Honorable Commissioner of Patents and Trademarks  
Alexandria, VA 22313-1450

**REPLY BRIEF UNDER 37 CFR § 41.41(a)(1)**

Sir:

This Reply Brief is filed in response to the Examiner's Answer dated April 28, 2009, and supplements the Appeal Brief filed January 8, 2009.

### **A. STATUS OF THE CLAIMS**

Claims 1-7, 10-12 and 17-20 are pending in the application and have been finally rejected and are on appeal. Claims 8-9 and 13-16 have previously been canceled.

### **B. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

(a) Whether or not Claims 1, 3, 4, 6, 7, 10, 11, 17, 19, and 20 are unpatentable under 35 U.S.C. §103(a) as obvious over Gallet 4,817,596, in view of Vogliano 5,191,882. Claims 3-4, 6-7, and 10-11 are directly or indirectly dependent from Claim 1. Therefore, if Claim 1 is allowed Claims 3, 4, 6, 7, 10 and 11 should also be in condition for allowance. Claims 19 and 20 are directly dependent from Claim 17, therefore if Claim 17 is allowed Claims 19-20 should also be in condition for allowance.

(b) Whether or not Claims 2, 12, and 18 are unpatentable under 35 U.S.C. §103(a) as obvious over Gallet 4,817,596, in view of Vogliano 5,191,882 as applied to Claims 1, 2 and 17 above, and further in view of Lane 5,555,569. Claims 2 and 12 are directly or indirectly dependent from Claim 1. Therefore, if Claim 1 is allowed Claims 2 and 12 should also be in condition for allowance. Claim 18 is directly dependent from Claim 17, therefore if Claim 17 is allowed Claim 18 should also be in condition for allowance.

(c) Whether or not Claim 5 is unpatentable under 35 U.S.C. §103(a) as obvious over Gallet 4,817,596, in view of Vogliano 5,191,882 and further in view of Epperson et al. 6,279,172. Claim 5 is directly dependent from Claim 1, therefore if Claim 1 is allowed Claim 5 should also be in condition for allowance.

### **C. ARGUMENT**

Examiner's Answer makes several points of argument which are untenable and can not be sustained. Reconsideration is respectfully requested.

1. Examiner states in Answer's **(10) Response to Argument**, paragraph 11, line 1: "The appellant argues that the system taught by Gallet and the head harness of Vogliano could not work together. The examiner disagrees." First of all, appellant's primary argument is that Gallet and Vogliano do not actually teach, disclose, and/or suggest all of the claim limitations of Claims 1 and 17 and that, therefore, the rejection under 35 U.S.C. § 103(a) should be withdrawn.

It has been conceded that Gallet does not teach an adjustable head harness as a component of the face protection shell or mask. Rather, Gallet discloses a two-point spring and hook system which attaches the mask to the helmet of the user. Gallet's mask is held and sealed to the face of the wearer by attachment to the helmet worn by the wearer. The two-point hook and spring system can then be tightened to secure the mask to the face of the user through tension to the helmet. The face protection shell or mask of Gallet does not teach or suggest the adjustable head harness as claimed by applicant. In fact, the approach used by Gallet for integrating a mask and helmet shell has been used in the past in a number of integrated helmet-mask projects. Failure of these systems to achieve the protection levels required for chemical-biological protection ultimately lead to applicant's invention. Attaching a mask to a helmet in a manner described by Gallet is suitable for the low levels of protection previously needed by police and firefighters. Commercial standards require a 50:1 protection factor for negative pressure respirators. Military chemical-biological protection requirements mandate a protection factor of at least 10,000:1. Achieving these high levels of protection in a negative pressure system requires the use of a multi-point suspension. Gallet cannot achieve these high levels of

protection because the seal is being pushed onto the face with a two-point attachment system which is inadequate to achieve a uniform seal distribution on the face. This uneven distribution of the seal not only provides inadequate protection, but can also create significant discomfort for the wearer thereby limiting sustained operations.

Vogliano has been relied on as teaching a head harness attached directly to a mask. However, Vogliano teaches an apparatus for enabling a strapless mask, which is designed only for use with and attachment to a protective helmet, to be worn without the helmet. The strapless mask described in Vogliano is designed only for use with a protective helmet, and is attached to the protective helmet via plugs 3 and plug receptacles 4. Like Gallet, this is a standard mask-helmet configuration in the prior art wherein the mask is held to the wearer's face via the attachment to the helmet. It is this configuration which applicants have found to cause defective seals between the mask and the wearer's face because the helmet can loosen or break the mask's face seal as the wearer moves his/her head. Since the mask is strapless, Vogliano teaches that the strapless mask (which is ordinarily only used with a helmet) can be removed from the helmet and inserted into a detachable, resilient mask holder (Vogliano's invention) so that the strapless breathing mask can be used without the helmet. Under normal operations, the strapless mask would be used in combination with the helmet by attaching it to the helmet using a helmet mounted connector system of plugs and receptacles. Should the helmet be removed, the strapless mask can be fitted with Vogliano's mask holder comprising a head-based suspension system, to allow the mask to be worn without the helmet.

This approach has two main problems. First, the helmet can not be removed without losing mask protection when converting from a helmet mounted strapless mask to Vogliano's

mask holder. Second, the mask holder/suspension system of Vogliano and the helmet are not designed to work together in any way, meaning that Vogliano's suspension system is independent from the helmet and not integrated with the helmet in any way. In fact, if Vogliano's holder suspension system were used together with a protective helmet, the result would be nothing more than what has always existed and been used by the military and other helmet and mask wearers, i.e., a mask engaged to the wearer's face by head straps or suspension system independent from the helmet, with the protective helmet worn on top of the mask's straps and/or suspension system. This approach has proven defective for both the integrity of the mask's face seal, and the comfort and proper fit of the protective helmet. It is because of the shortcomings of the simple, non-integrated helmet and mask combination, and the shortcomings of masks configured to maintain their face seal by attachment to the helmet, that applicant's have invented the modular mask-helmet assembly as described and claimed in the present application.

Appellant's Claims 1 and 17 both include "(a) a helmet capable of enclosing the head of a user, said helmet comprising an impact resistant material; and (b) a face protection assembly, alternately attachable to and detachable from a front part of said helmet, which face protection assembly comprises (i) a face protection shell comprising an impact resistant material; (ii) a vision port through the shell at the level of the eyes of a user; (iii) a flexible nosecup assembly within the shell, which nosecup assembly is positioned to engage the mouth and nose of a user, said nosecup comprising a breathe-through airflow assembly and a filter unit; (iv) a flexible face seal, disposed on an inner surface of the shell around the nosecup assembly and the vision port, which face seal is capable of engaging the face of a user; and (v) an adjustable head harness attached at an surface of the shell or the face seal which is capable of engaging the back of a

user's head to thereby adjustably secure the face seal and nosecup assembly to a user's face, and (c) either (i) or (ii): (i) a transparent, impact resistant lens fixed to the vision port at the level of the eyes of a user; (ii) a transparent, impact resistant lens rotatably attached at the front part of the helmet and positioned to alternately engage and disengage with the vision port of the shell at the level of the eyes of a user." This design configuration of the face protection assembly and its integration with a helmet as described and claimed by applicant are simply not taught or suggested by the combination of Gallet and Vogliano. Appellant's face protection assembly includes a face protection shell having a nosecup assembly with filters, a flexible face seal, and a head harness for engaging the back of the wearer's head to secure the face seal to the user's face. This system of creating an airtight seal is independent of the helmet, which can be attached to the face protection assembly after the face protection assembly is donned by the user.

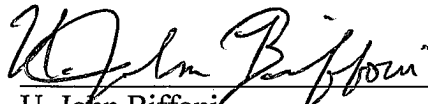
It should be recognized that applicant's have designed a modular helmet-mask assembly that addresses a long desired need to provide both helmet and face mask protection while maintaining a face seal that provides a very high protection factor required for military personnel operating in a chemical or biological warfare environment. It does this by including an internal harness system as part of the mask which seals the mask (face protection shell) to the face of the user, and allows the helmet to be engaged with the mask in a fashion that will not affect the mask's face seal after the helmet is attached to the face protection shell and the helmet stabilized. While many helmets provide crash and ballistic protection, applicants are not aware of any that provide internal chemical-biological protection without the use of some external means of forced blown filtered air.

The examiner argues that the head harness of Vogliano and the system taught by Gallet can "work together" because "as shown in figure 8 of Vogliano, the harness has an opening 11 that is large enough to accommodate the vision port and still have a gap between the opening and the outer periphery of the port." It is respectfully submitted that even if the head harness of Vogliano can accommodate the mask of Gallet, such a combination does not teach or suggest applicant's claimed invention. The combination of Vogliano and Gallet merely produces a standard, well-known, non-integrated helmet and mask combination prone to defective face seals and loss of protection.

In summary, Claims 1-7, 10-12 and 17-20 are on appeal and based on the foregoing remarks and arguments should be considered in condition for allowance. Accordingly, it is respectfully submitted that pending claims 1-7, 10-12, and 17-20 are patentable and in condition for allowance. Early reconsideration and withdrawal of the rejections and allowance of the claimed subject matter is earnestly solicited.

Respectfully submitted,

June 16, 2009  
DATE

  
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